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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/552,048

10/04/2005

Cornelis Hermanus Van Berkel

NL 030348

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7590

09/05/2008

NXP, B.V.

NXP INTELLECTUAL PROPERTY DEPARTMENT

M/S41-SJ

1109 MCKAY DRIVE

SAN JOSE, CA 95131

EXAMINER

YAARY, MICHAEL D

ART UNIT

PAPER NUMBER

2193

NOTIFICATION DATE

DELIVERY MODE

09/05/2008

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/552,048	<b>Applicant(s)</b> VAN BERKEL ET AL.	
	<b>Examiner</b> MICHAEL YAARY	<b>Art Unit</b> 2193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 October 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 October 2005 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/04/2005</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

1. Claims 1-8 are pending in the application.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, and 4-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Gu (US Pat. 6,173,009).

4. **As to claims 1 and 4**, Gu discloses a method for accomplishing state transitions in configurable linear feedback shift register (LFSR) controlled by a clock (abstract and column 5, lines 4-5); the length of the LFSR being represented by N, wherein a state vector represents the state of the LFSR (column 2, lines 11-22 and column 4, lines 61-67); an output of the LFSR comprising W output symbols, W being at least two, and the output symbols being generated during one clock cycle (column 3, lines 6-11 and column 8, lines 19-22), a state transition of the LFSR being accomplished during one clock cycle via multiplication of the state vector by a state transition matrix to the power

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of  $W$ , characterized in that said multiple state transition matrix is decomposed in a first matrix and a second matrix, the first matrix comprising at most  $N+W+1$  different expressions and the second matrix comprising at most  $N+W+1$  different expressions (column 3, lines 6-54 and column 4, line 55-column 5, line 36).

5. **As to claims 2 and 7**, Gu discloses wherein the expressions of the first matrix are evaluated during a configuration stage of the operation of the LFSR (column 5, lines 15-36).

6. **As to claim 5**, Gu discloses that the multiplication means comprises a first set of logical units for performing the multiplication of the state vector by the second matrix and a second set of logical units for performing the multiplication of the state vector by the first matrix (column 5, lines 15-36 and different multiplication stages of figure 6).

7. **As to claim 6**, Gu discloses that the LFSR comprises a third set of logical units for computing the first matrix (column 5, lines 15-36).

8. **As to claim 8**, Gu discloses the second set of logical units is coupled to the first set of logical units via an intermediate data register (column 2, line 57-column 3, line 8).

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gu.

11. Gu does not explicitly define the second matrix elements by  $G_{ij} = \{1, \text{ if } i-j=W; g_{i+j-N+1}, \text{ if } (i+j) \geq N-1 \wedge (j \geq N-W); 0, \text{ otherwise and the elements of the first matrix are defined } P_{ij} = \{1, \text{ if } i=j \wedge i < N-W; P_{i+j-2N+W+1}, \text{ if } i+j \geq 2N-W-1; 0, \text{ otherwise.}$

However, Gu discloses defining matrix elements used in the circuit LFSR circuit producing state transitions (column 4, line 32-column 5, line 67).

12. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the matrices implemented in the circuit, as taught by Gu, for the benefit of obtaining the predictable result of state transitions. Further motivation can be found in that the matrices defined in Gu would allow for minimal memory storage requirements for transition matrices.

***Conclusion***

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13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Pat. 5,987,056 - PN sequence hopping method and system

US Pat. 6,594,680 - Pseudo-random noise sequence generating system

US Pat. 6,640,236 – Generating multiple bits of a pseudo-noise sequence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL YAARY whose telephone number is (571)270-1249. The examiner can normally be reached on Monday-Friday, 8:00 a.m - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lewis Bullock can be reached on (571) 272-3759. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/M. Y./  
Examiner, Art Unit 2193

/Lewis A. Bullock, Jr./  
Supervisory Patent Examiner, Art Unit 2193